

THE GALAXY S4 ZOOM'S
SPLIT IDENTITY

ACER'S 8-INCH
WINDOWS TABLET

PLUS:
Q&A WITH NEXT3D
CEO DAVID COLE

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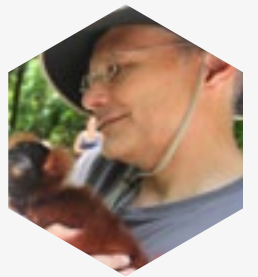
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ALL GOOD THINGS

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EDITOR'S LETTER

I still remember the comments on my welcome letter when I took over Engadget on a sunny day in early 2011. It was beautiful outside and there I was sweating bullets in a tiny NYC hotel room, watching the reaction in comments and elsewhere. Needless to say, there was more than a little hate, but there was so much warmth and optimism and welcome it really powered me through what ultimately became a very long, very good day. That support carried me past more than two incredibly challenging, hugely rewarding years.

And so it's with a heavy heart that I say that I'm stepping away. Those early days in 2011 were an incredible challenge, and if I'm frank, it never really got any easier, with the dawn of new competition and an incredible evolution in the quality of tech journalism over the past few years. We've

always had our work cut out for us at Engadget, and I'm hugely proud of how our team rose to the challenge, recently winning numerous awards for content, video and design and, most importantly, maintaining the respect of the Engadget brand.

It goes without saying that I had a great opportunity to shape Engadget and I always strove to turn it into a site that everyone, on both sides of the aisle, respected. Respect is the most important thing for me, and those who worked under me at Engadget have earned my eternal respect. I hope you'll give them the same. Please know that I am so incredibly thankful for your support over the years, even to the haters. Without your hard licks, I, and the entire Engadget team, wouldn't have been as driven to exceed as we have always been.

As for me? Well, I don't have any specific plans for the moment, but let's just say I'm looking forward to taking a little break before dealing the next hand. The sky's the limit. 

TIM STEVENS



STAR-SIGHTED SMARTPHONES, QUICK SHIP FIXES AND MR. MASSIVE MID-RANGE



Touch article names
to read full threads

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INBOX



NOOK TABLETS:
AN EPILOGUE
ISSUE 98,
JULY 12TH, 2013

“The original Nook Color was a tremendous value. At \$250 it was less than half the price of a Xoom/Galaxy Tab/Transformer. Easily hacked to run custom ROM’s it was the darling of the Android community. B&N should have seen the opening their product created and ran with it. Instead they continued down the path of a proprietary interface

THE MOBILE MEGAPIXEL WARS GO THERMONUCLEAR
ISSUE 98,
JULY 12TH, 2013

“Next development:
a smartphone with
Hubble telescope
function capability
that’s able to view galaxy
and star constellations
from the earth.”

— LOCO-LOCO

and app store. It absolutely killed the device.

One other side note — the USB cables were utter junk. I can’t tell you how many people forever swore off the Nook line due to their crappy cables. Go to B&N’s website and read the reviews. Seriously, they might have

been the worst cable ever manufactured.”

— BJSWORLD

WINDOWS RT 8.1
ISSUE 98,
JULY 12TH, 2013

“I’ve been using a Surface RT for quite a while now, and one of the big-



gest problems was the responsiveness of IE and the reader app, so far, with 8.1 I've experienced less hang ups on both apps, especially on reader, it now takes me less than half the time to load large PDFs."

— JOSE VICTOR VILLARREAL

FOUR WAYS TO FIX
E-COMMERCE AND
SHIPPING COMPANIES
ISSUE 98,
JULY 12TH, 2013

"#1 Seems like a no-brainer. You could get a junior app programmer a week to write an app for employee smartphones that matches a delivery ID number with a photo taken by the

employee, and pull time-stamps from the picture metadata. Auto-upload or upload when they get back to base."

— ZANGETSU

"I would just move. So much simpler than attempting to fix the shipping problems."

— NONUNIFORM

LENOVO THINKPAD HELIX
ISSUE 98,
JULY 12TH, 2013

"This would be pretty cool if it were \$1100 cheaper."

— TECHHOG

"This would have been a great product to buy in 2012.

RAZER BLADE 14
ISSUE 98,
JULY 12TH, 2013

"Please make it
Full HD, and
take my money."

— NOMAD

While Lenovo's competitors are offering designs with Haswell and 3,200 x 1,800 ultra-crisp displays, Lenovo is peddling 2012 technology. And they used to be on the cutting edge of technology. Keep this up and they will become the next Dell."

— THATSJUSTHOWISEEIT

SAMSUNG GALAXY
MEGA 6.3
ISSUE 98,
JULY 12TH, 2013

"I love that this exists, but I don't understand who would want a huge screen AND mid-range specs... Who is this person?"

— BY DAVID ROSEN

THIS IS YOUR LIFE
ISSUE 98,
JULY 12TH, 2013

"My postings on Facebook do not even come close to being a representation of my life."

— KAIA XY

"So they want too record how we live?"

— INSPECTOR GADGET80



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EYES-ON

**RICOH
GR**

CHARMING POINT-AND-SHOOT

Point-and-shoot cameras aren't usually known for their dashing good looks, but one particular model caught our eye. The Ricoh GR bears aesthetic characteristics of classic shooters in addition to internals poised to do a bit of photographic heavy lifting.

THE DAMAGE: \$800



BLACK
KNIGHT

WIDE-ANGLE
VIEWS

PHOTO
CHOPS

Tap for detail



ENTER

EYES-ON

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RICOH
GR



BLACK KNIGHT

In addition to its all-black exterior stylings, the GR sports a textured grip similar to that draped around several classic models.



PHOTOGRAPHS BY WILL LIPMAN



ENTER

EYES-ON

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RICOH
GR



WIDE-ANGLE VIEWS

A 3-inch LCD is situated on the backside to keep tabs on shots and also sports some stellar viewing angles.



PHOTOGRAPHS BY WILL LIPMAN



ENTER

EYES-ON

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RICOH
GR



PHOTO CHOPS

To further the classic look, the Ricoh GR wields a top dial for adjustments to go with its 16-megapixel APS-C sensor.



PHOTOGRAPHS BY WILL LIPMAN





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NOKIA LUMIA 1020



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And here she is, in all of her glory. As expected, the hardware's a beauty on this thing. There's that slick unibody design we've come to expect from recent Lumia devices, and in spite of amped-up optics, the company hasn't really done too much to impact weight and profile. On the front is an eye-catching 4.5-inch, AMOLED PureMotion HD+, 1,280 x 768-pixel dis-

PRICE: \$300 (ON-CONTRACT)

AVAILABILITY: JULY 26TH

THE BREAKDOWN: NOKIA PACKS ITS 41-MEGAPIXEL PUREVIEW TECH INTO THE SLIM, 4.5-INCH LUMIA 1020.

play, which nicely complements Windows Phone 8's bright UI.

Remember that thing we said about the slim profile? Well there's one important, but understandable caveat to that. The lens juts out a bit on the back of the thing, so if you try to lay it on that side, it won't sit flatly. About a third of the back side is monopolized by that big lens. That, after all, is kind of the point here.

Software-wise, you're talking mostly standard Windows Phone 8 fare, though if you're primarily interested in the photo aspect, the camera button will take you exactly where you want to go. Take a shot





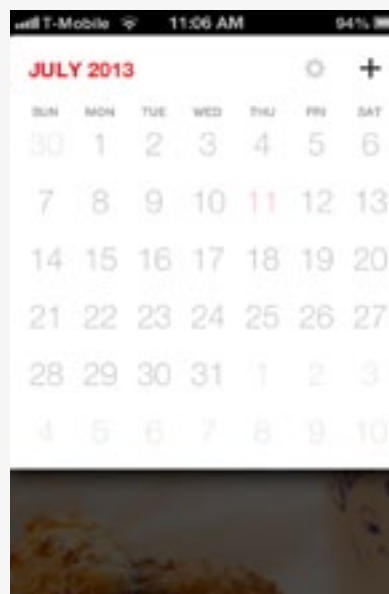
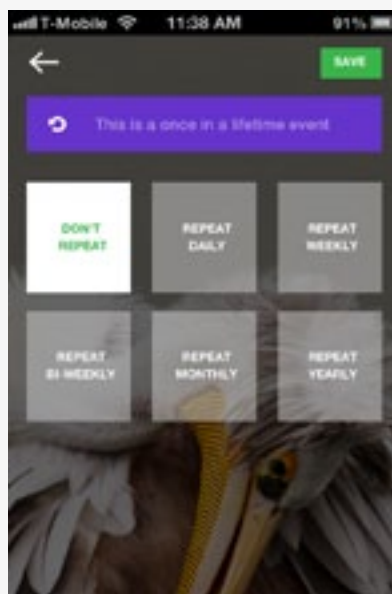
and zoom in and out to reframe it after the fact. Photos may take a bit longer to show up than on other devices, since it's making a 5-megapixel copy at the same time, for all that WP8 social sharing you plan on doing.

If you want to fiddle with the settings, as you no doubt do, a button will bring you to different apps that play nicely with the new camera, including Bing Vision, Panorama, Photosynth, Vyclone and Nokia Pro Camera. Naturally, we started with the latter, which offers up instantaneous changes to settings like the white balance, ISO and exposure. It's simple to use, and photo pros are no doubt going to want to spend a lot of time in there.

Now, about that optional camera

grip. Think of it like a Mophie Juice Pack mixed with, well, a grip and a shutter button. The phone slides in from the top and locks in with a micro-USB connector at the bottom. On the exterior, you'll find a tripod thread along the side, while the bottom houses a micro-USB input for charging the battery packed inside — four LEDs are on-board to check the charge level at the touch of a button. The shutter button thankfully has a nice and tactile click, with a pleasing amount of tension between a half and full push. Lastly, a strip of rubber for your fingertips adds to the secure feel of its matte finish. Sure, it's a bit bulky, but we'll bet some folks won't mind.





ANY.DO CAL

When Any.DO — the brains behind the popular iOS to-do app — announced Cal for iOS last month, we had high hopes for its take on calendar functionality. Cal is now available for download in the App Store, but we had a chance to play with it early to see what it was all about. The app marks the company's initial foray into a full-blown suite of productivity apps, which will include, at some indeterminate point in the future, Any.DO's own email app.

The first thing we noticed about Cal is just how pretty it is. Users can choose from a selection of nine different photo themes to spruce up their calendar. Gorgeous full-screen photos vary by day, according to your chosen theme(s). The calendar is fairly easy to navigate: swiping sideways scrolls through days and tapping on the image drops down the weekly view. From there, a quick downward brush of your finger brings up the full month. When adding events, Cal

PRICE: FREE

AVAILABILITY: NOW AVAILABLE

THE BREAKDOWN: ANY.DO LAUNCHES INTO ITS PRODUCTIVITY SUITE WITH CAL, BUT INTER-APP COMMUNICATION GETS LEFT OUT.

scans relevant local restaurants and your contacts to help you flesh out your plans.

While Cal easily syncs with your existing calendars and contacts, we do wish it better integrated with Any.DO's to-do app. As it stands, the two aren't quite in sync. After clicking the "add" icon on the calendar, you're given the option of adding an event or a task. Choosing the latter launches the Any.DO app, where you can input your task as you normally would. Unfortunately, tasks entered in Any.DO don't sync with events in Cal. As pleased as we were with Cal's design, we did experience a few performance issues. The app crashed twice and was occasionally a little slow to respond. Considering that the version we tried was still in beta, we're willing to give Any.DO the benefit of the doubt and we expect the kinks will soon be worked out.




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HTC ONE GLAMOUR RED



A lot of the smartphone color options we see announced are no big deal, but there was a certain *something* about HTC's metallic-red One that demanded closer attention. We've just handled the burgundy bombshell, which has the same hardware credentials seen on the silver and black options (4.7-inch 1080p display, UltraPixel camera, Snapdragon 600 processor), but coated in a metallic "glamour red" finish just in time for summer. The color extends across the rear of the smartphone, the two speaker panels on the front and the chamfered edge that connects the two. The effect is slightly textured to the touch (more than the initial monochrome models, at least), making it a bit easier to grip, while bouncing around any ambient light that manages to hit it. That's pretty much all there is to say because the phone's fortunately otherwise unchanged. 

**PRICE: VARIES
BY CARRIER**

**AVAILABILITY:
JULY 2013 (TAIWAN
& UK)**

**THE BREAKDOWN:
HTC'S FLAGSHIP
ONE GETS A NEW
COAT OF RED
PAINT, BUT THIS
TOP-NOTCH
PHONE REMAINS
OTHERWISE
UNCHANGED.**



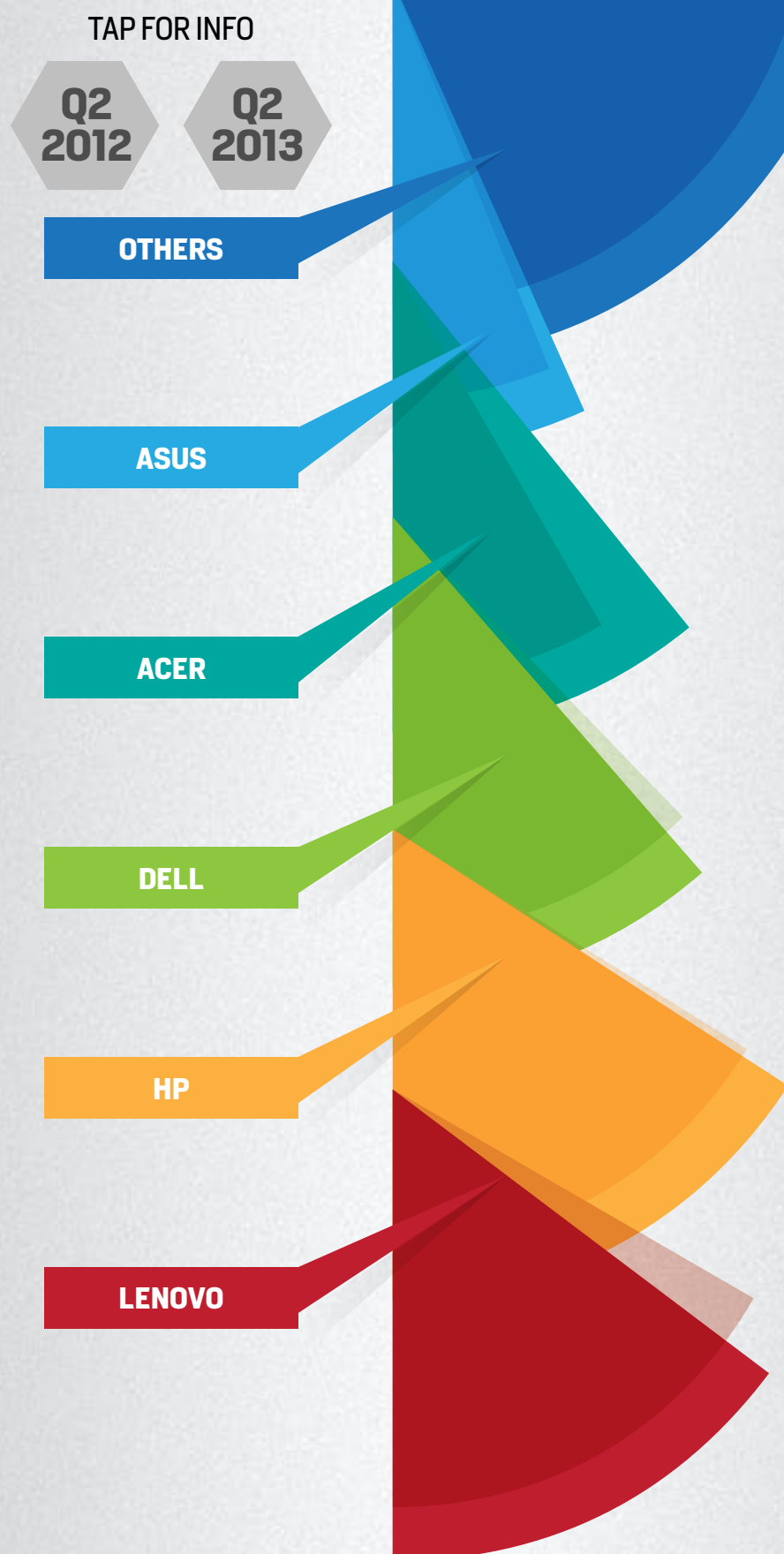
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The PC Cool Out Continues

If you were looking for a bounce back in the PC market after a sobering first quarter... well, keep looking. Both Gartner and IDC estimate that shipments fell about 11 percent year-over-year in the second quarter. The two analyst groups blame the decline on sluggish uptake in a few regions, most notably China and Europe, as well as a market that favors tablets over low-end computers. Taiwanese PC makers like Acer and ASUS faced steep yearly declines as they switched their attention toward tablets and Ultrabooks, while even top-seated Lenovo took a small bruising. — *Jon Fingas*

GLOBAL PC SHIPMENTS FOR TOP 5 VENDORS



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GLOBAL PC SHIPMENTS FOR TOP 5 VENDORS

TAP FOR INFO

Q2
2012Q2
2013

OTHERS
40.4%
30,589

GROWTH: -11.2%

ASUS
6.1%
4,590

GROWTH: -21.1%

ACER
8.2%
6,226

GROWTH: -32.6%

DELL
12.2%
9,230

GROWTH: -4.2%

HP
16.4%
12,378

GROWTH: -7.7%

LENOVO
16.7%
12,619

GROWTH: -1.4%

Units Shipped are in Thousands

2013 NUMBERS ARE PRELIMINARY



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GLOBAL PC SHIPMENTS FOR TOP 5 VENDORS

TAP FOR INFO

Q2
2012Q2
2013**OTHERS**
40.4%
34,464**ASUS**
6.8%
5,820**ACER**
10.8%
9,241**DELL**
11.3%
9,633**HP**
15.7%
13,414**LENOVO**
15%
12,802

Units Shipped are in Thousands





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The NES Turns 30: How it Began, Worked, and Saved an Industry

By Andrew Cunningham
Ars Technica

Without Nintendo's Famicom there would be no NES. And without the NES, chances are, the video game industry as we know it would never have existed. It's hard to appreciate history while you're living it, but 30 years ago, Nintendo's Japan-only Family Computer debuted and set off a domino effect that would make video games a global, billion-dollar industry and make Nintendo synonymous with gaming itself. Rather than look back with the rosy tint we have for the NES' early days, *Ars Technica's* Andrew Cunningham has gone the informed route to celebrate the system's anniversary. From a condensed account of the console's origins (i.e., failed Atari distribution deal, revised prototypes, soft US launch in 1985) to a walk-through of the silicon circuitry and hardware add-ons (like the Famicom Disk System and Modem) that only saw the light of day in Japan, the retrospective covers all the bases of gaming's golden era. There's a whole lot more Nintendo trivia packed into the retrospective (did you know the original Famicom's controllers had inbuilt mics?), so be sure to check it out and pour one out for that famous grey box. — *Joseph Volpe*

Desert Bus: The Very Worst Video Game Ever Created

By Simon Parkin, *The New Yorker*

It may have never actually been released, but the Penn & Teller-developed *Desert Bus* is now one of the best-known games associated with the ill-fated Sega CD. Here, Simon Parkin takes a look at the history of the game and its resurgence in popularity in recent years, which has included an annual event to raise money for charity and an actual release of the game on Android and iOS.

Censoring the News Before It Happens

By Perry Link, *The New York Review of Books*

As Perry Link explains in this piece for the *New York Review of Books*, censorship in China (on the internet, in particular) has grown to an immense size in recent years, far surpassing efforts from any other country or any other time. He also explains how it works, detailing the carefully honed system that, as the title suggests, allows the country to censor news before it even happens.

The DNA Data Deluge

By Michael C. Schatz & Ben Langmead, *IEEE Spectrum*

It's now been well over a decade since the announcement of a first draft of the human genome and, as *IEEE Spectrum* explains here, the years since have seen a steady pace of research. Indeed, there is now getting to be more data than researchers are able to keep up with, which has prompted new efforts in advanced computing — including from the likes of Google.





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THE WEBTV REVOLUTION THAT DIDN'T HAPPEN



EDITORIAL

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FORUM

BY BRAD HILL

You might think it should have happened sooner. Last week, Microsoft announced it would decommission its MSN TV (formerly WebTV) service. Even I didn't think it would last this long, and I was WebTV's greatest advocate back in the day. In fact, I was its official evangelist, hired by founder Steve Perlman and his company's PR agency as WebTV's national media spokesperson for a period leading up to and including the product launch.

In 1996, WebTV was tech's hottest startup, considered a blazing harbinger of the future, all for pretty good reasons. WebTV was primarily an internet popularization play during an era of widespread uncertainty about computers in the home and the value of being online. If tablets and smartphones represent a Steve Jobs-ordained post-PC era, WebTV can be seen in retrospect as a pre-PC computing category. In my view, it wasn't modern web-connected TVs that finally killed WebTV (MSN TV) — it's the mobile revolution that did it.

It's easy for the tech community to forget what digital life is like for mainstream

users who don't have a particular interest in gadgets, operating systems, product variations and the most basic underpinnings of their digital experiences. Many people don't know what a browser is. And why should they? Before computers, consumer technology was transparent. There wasn't much of a learning curve to operate a telephone or television. That, in a nutshell, was the rationale of WebTV.

In discussions with Perlman in the summer of 1996, we hammered out talking points for the upcoming media push. Perlman emphasized over and over the ease of WebTV. It took the internet off a multi-function platform and put it on a single-function device (the TV) that everyone knew how to use.

Anyone who has assisted senior citizens with computers understands the viability of WebTV's premise (of course, I am generalizing about seniors' adeptness with computers). Over many years I have observed one insistent tendency in people who have difficulty operating computers. Even those who become adroit in certain uses do so by memorizing a vertical in-



struction set, rather than understanding the platform horizontally. My mother, a children's book author, adopted computers in the 1980s, recognizing the clear advantage of word processing. She knew the DOS commands she needed to produce a manuscript. Later, she had much more difficulty with Windows because of its horizontal, multitasking interface. She stuck with DOS for writing, and finally learned how to look at her investment portfolio in the Windows environment. That Windows computer became a Yahoo Finance machine — nothing else. Through meticulous effort, she learned the vertical task of checking the portfolio. (Hi, Mom.)

Perlman developed WebTV when the web was just emerging. Recognition was growing, but online citizens were a population of early adopters. I was at CompuServe during that time, and we were startled to learn that some of our users had bought a computer for the sole purpose of accessing the internet. That was eye-opening, breakthrough consumer behavior. The online experience was starting to drive computer adoption, but nobody knew how deeply into the market that phenomenon would penetrate.

Email was the killer app. Perlman assumed a market of people would purchase email access for the home, but would not buy a bewildering and expensive computer to get it. Email, not being a design-specific product, was easy to

deliver in an alternate format. It worked pretty well on WebTV. Web pages were much more difficult, even in those early HTML days.

To solve the display issues, Perlman developed page-coding standards that reformatted web pages for the size and aspect ratio of small tube sets. Part of the business plan involved motivating web publishers to create WebTV-formatted versions of their sites, just as today's publishers create mobile-optimized versions. (The clueful ones do; amazingly, many still provide a wretched mobile experience in 2013.) It was a walled-garden dream of developing a WebTV version of the internet, just as AOL was doing at around the same time, and as Netscape attempted with its proprietary browser extensions. There was some uptake on the part of publishers, but most sites in the exponentially expanding web simply allowed WebTV to reformat their pages for better or worse. Sites were often ugly through the WebTV lens, and sometimes unusable.

The media tour began, and I spent several weeks on both coasts evangelizing the upcoming product on TV, on radio and in print. There was intense demand for interview time. That was why Perlman had to hand off the media speaking in the first place — he couldn't handle the media requests and run his business. Handling interview questions from a wide spectrum of outlets, from tech

Email was the killer app.



publications to homemaking magazines, revealed a couple of repeating themes. Naturally, I fielded inquiries about product features and how to operate the thing. Print interviews were staged in hotel suites with WebTV set up and connected through its telephone modem for live demos.

But the main evangelizing came up around the question, “Why do people need the internet?” WebTV’s launch was wedged into a historical moment when web discovery, doubt and confusion were battling in the public imagination. The solution provided an easy on-ramp piggybacked to a device everyone owned and understood. The media coverage was mostly fair, even when not exactly enthused, but off the record I often got a vibe from interviewers which, had they expressed it, would have been, “This thing is dead before it hits the street.” And that sentiment was more about the internet than about WebTV delivery.


Launch plans were ambitious. The original concept included wiring an entire town — Webb, Miss. — with WebTV, and flipping the switch in a televised outdoor ceremony at which I would pound the pulpit. To my acute disappointment, that plan was canceled, purportedly because

**Mobile devices
— that’s the real
hammer to
WebTV, I think.**

the town’s infrastructure couldn’t handle the bandwidth load. But a fairly dazzling bit of staging did take place, when spot-light trucks rolled through New York on launch night, brilliantly displaying a giant WebTV logo on the sides of skyscrapers.

Assessing the demise of WebTV is probably unnecessary — every proposed reason for Microsoft’s decision has some truth. Computers have become household appliances. (Though still not easy or desirable for many people.) The long-sought internet / TV convergence is happening in new ways, most of them specialized to deliver TV-like content (not email). Mobile devices — that’s the real hammer to WebTV, I think. When the iPad was introduced, and was voraciously adopted by seniors, the tablet paradigm provided a new on-ramp to an internet experience. Touching an app icon is a vertical action, not unlike changing channels on a TV.

WebTV never scaled into the market as hoped, but its users were a loyal, dedicated, WebTV-loving lot. I wrote three editions of *WebTV For Dummies*. During the five-year life of that book, I received countless emails, every one of them typed on a TV, begging for new editions and updated information. That book sold outrageously well for a title that was launched into a population of about a million units — a tiny market for a book.

Farewell, WebTV, which I never adjusted to calling MSN TV. You were an interesting, exciting startup at a crossroad of the internet’s evolution. 



DEAD! DEAD! DEAD! (IN 2D)

DISTRO
07.19.13

FORUM

SWITCHED
ON

BY ROSS RUBIN

CONNOR “CON” SUMER looked up at the beast that stalked him ever since flat-panel TV sales began to flatten out. “Stereoscopy,” he thought, “the word even sounded like an uncomfortable medical procedure.” This was far from the first time 3D tried to take over the world. Fueled by a steady diet of hype, the fight continued for years this time, but now, at last, it was coming to an end.

Con looked down at his tattered clothes. They weren’t torn in the battle. Rather, he just wasn’t able to afford new ones after all the money he spent on a 3D television. He was viewed as a hero, but the beast itself did so much to self-destruct — high prices, glasses incompatibility, forcing choices between resolution and convenience and limited content.

The monster was further weakened to the point that going in for the kill was easy. Major broadcasters, including ESPN and the BBC decided to abandon 3D while 3net, a partnership among IMAX, Sony and Discovery Communications, remains available only on DirecTV. On the

video game front, while the PlayStation 4 supports 3D, at least as well as its predecessor, there’s little emphasis on 3D for the forthcoming console.

Still, even now, there are well-intentioned forces on the side of 3D that are trying to make things easier for everyone. There is the chunky, but inexpensive Kickstarter project called Poppy that seeks to bring some of the iPhone’s halo to 3D image capture. Phones that supported 3D natively, like those from HTC and LG, display 3D in only one orientation, flopping instead of flipping. Instant 3D, another Kickstarter project, from holography pioneer Gene Dol-





goff, turns virtually any content into 3D — even on a 2D television. But it hasn't captured even 10 percent of its overly ambitious \$850,000 goal. Then there's Nintendo, which has somehow always managed to make technologies that failed elsewhere — such as dual screens, styli and resistive touchscreens — work. For many other device-


“He sailed toward the monster and hurled a copy of the *Clash of the Titans* Blu-ray disc at it.”

COURTESY OF SAMSUNG

es, resistive was futile.

The 3D monster smiled at him, as it put on a pair of glasses compatible with only one brand of televisions. “You wouldn't hit someone with glasses, would you?” it coyly asked.

Con felt a force yawning closer. A giant wave of indifference was rushing straight toward 3D. If only he could find a way to ride it. Scrambling onto his remote control like a surfboard, he sailed toward the monster and hurled a copy of the *Clash of the Titans* 3D Blu-ray disc at it and penetrated its depth of field. The monster split into cyan and red ghosts. And then it was gone.

Con breathed a sigh of relief. Finally, he thought, the nightmare was over. Then, from around the corner, he saw the beast driving a car that produced a peculiar optical illusion — the closer it seemed, the farther away it was. “I'll be back!” 3D roared. “And I'll be bringing my auto-stereoscopy with me!” 



WE KNOW TOO MUCH

DISTRO
07.19.13

FORUM

THIS IS THE
MODEM WORLD



BY JOSHUA FRUHLINGER

I WAS ENJOYING a post-wedding celebration in Los Angeles' Little Tokyo just a few days ago, late-night ramen that turned into later-night karaoke until we were kicked out of the place around 4 AM. A good night, to be sure. As I was collecting my things, I checked my iPhone for the best route home — I am perpetually lost in Los Angeles as it's a city that has no compass. It suggested a jaunt through Hollywood and on to La Cienega. In an effort to keep myself from sounding like an episode of *SNL*'s "The Californians," I'll leave it at that.

So my phone presented me with a choice of two, maybe three routes as our mapping programs are trained to do. Given that it was 4 AM, I wasn't leaning in one direction or another, but I did pause at the thought of driving through Hollywood as the clubs were shutting down and they were also repaving Sunset Boulevard.

My map programs will display traf-

fic conditions. They'll display weather and alternate routes. The better ones will know if there's an accident on a particular route. In this case, though, I didn't know if Hollywood was shut down due to people hanging out in the street or if the LAPD was looking to nab some late-night partiers on their way home.

I checked Google and while the local news outlets weren't reporting any ma-



“I have to ask: When do we reach the point of simply having too much information at our disposal?”

jor construction or street parties, I was still skeptical. Despite it all, I gave the drive through Hollywood a spin. Turns out my drive home was uneventful — peaceful, even.


And then I thought I had a great idea — these things happen to me at 4 in the morning — what if map programs and GPS systems culled the news and included it in locations in which it may affect local traffic? Say, if there is a major event going on at a stadium, it could monitor when the game ends and alert drivers to avoid those thoroughfares. Or if, in my case, it knew that there was some sort of emergency occurring in a particular area, and it would do the same?

That'd be great, right? Maybe there are even map programs that do this already. Certainly crowdsource mapping apps like Waze are getting us mighty close to what I'm talking about here, and there's no doubt the future of navigation includes more and more information to the point that many of us will be turning things off in order to... just get there.

No, this is not great. One look at

Waze, for instance, and I see a plethora of icons, some telling me that traffic is slow (according to those who have time to tell others that traffic is slow), others telling me that a driver is nearby and I can chat with him or her (why?), others saying that someone saw a cop there within the past hour (probably gone by now) and still others inviting me to shop at Home Depot.

Now imagine a future — and I can pretty much promise you this is coming — in which our maps are filled with pins that say “Robbery being investigated,” “Crazy 50% off sale here,” “Stop by for free coffee,” “Best bagels ever” and “Street protest, avoid!” It'll be a miracle we ever get anywhere.

Sure, we could turn those things off, but we all know we won't. We know too much. The internet is great, and crowd-sourcing mixed with news aggregation is a great direction to take our mapping needs, but I have to ask: When do we reach the point of simply having too much information at our disposal when we should be paying attention to stop signs and pedestrians? 





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**Acer
Iconia W3**



**Samsung
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ACER ICONIA W3



Acer hits the market with the **Iconia W3**, the first sub-10-inch Windows 8 tablet available, but can its hardware live up to the quality of the OS?
By Dana Wollman

It's sort of hard to believe, but the first sub-10-inch Windows 8 tablet only just went on sale a few weeks ago. For now, at least, the Acer Iconia W3 is the only 8-inch option available, though it surely won't be the last. What's more, it arrives in lockstep with Windows 8.1, which brings a few improvements that might make an e-reader-sized tablet like this especially easy to use (think: the ability to snap photos from the lock screen). And with a starting price of \$380 (Microsoft Office included!) it could be a great buy among Windows tablets, *period*, regardless of screen size.



HARDWARE

If you recall, the 10-inch Acer Iconia W510 tablet was the first finished Windows 8 device we tested, so it's not surprising the company is laying claim to the first 8-inch product as well. And whad-ya know? The W3 looks just like its big sibling, except cut down to size. This, too, has a gray plastic back cover and a band of white ringing the sides and front. At 1.1 pounds, it's the lightest tablet we know of that runs full Windows 8, but that's just a victory by default — it's not like there are any other 8-inch Win 8 tablets yet or anything. Even more than its actual weight (it's only slightly lighter than the W510), its real advantage is its more compact size, which makes it easier to

hold. We'd argue, too, that as boxy as the tablet is, its chunky shape helps make for a comfy fit. Ditto for the rounded corners and softened edges. Not pretty, exactly, but pleasant to touch.

And by the way, despite the fact that this is sort of a thick tablet, it doesn't actually make room for that many ports: There's your requisite power / lock button on the left, along with micro-USB and micro-HDMI ports. Flip it over to the right landscape edge and you've got both speakers, along with the power port and a standard 3.5mm headphone jack. All that's left are the volume buttons up top, plus an exposed microSD slot (and a bit of conspicuous Iconia brand-

Windows 8.1 improves the small-screen user experience.



ing). Wrapping up, there are cameras on the front bezel and also around back. Surprisingly, they're actually the same resolution: two megapixels.

KEYBOARD DOCK

Unlike with the W510 when it first came out, the W3 doesn't come standard with a keyboard; you have to buy it separately for \$80. One thing hasn't changed, however: the Bluetooth keyboard here is still the most awkward part of the design. In this case, the 8-inch W3 is paired with a full-sized keyboard, one that would be more at home on a 13-inch laptop. According to an Acer rep we interviewed back at Computex, the company decided a larger keyboard would make for a better typing experience, even if the small tablet and big keypad make for an unsightly duo. We can't say we disagree: the keys are well-spaced and deep, even if the underlying panel is a bit flimsy. And besides, if other PC makers can't nail the typing experience on a 10-inch device, how was Acer ever going to have a chance of success with an 8-inch model? Can you imagine the things we would have written in this review? Two words, folks: field day.

Even so, this thing has some incredibly strange design elements. Starting with the keyboard deck itself, there's a rounded slot where the tablet is meant to sit, along with a slightly protruding piece to prop it up. When it's just sitting there, the tablet stays put. But when it comes time to change rooms, or pack up and go elsewhere, you've got two choices, one of them being: "Hold the keyboard as steady as you can, with the tablet still inside, and pray you don't drop it." The other option is to pop the tablet into a scooped-out area on the back of the keyboard, which was designed to cradle the device when not in use. The problem is, inserting it can be a slightly finicky affair, particularly since the device doesn't make much of a "click" when you set it in, so it can be unclear when you've actually inserted it correctly. (To its credit, it never, ever fell out during our testing.) Additionally, having to stop to put the tablet in its slot takes time. Not much time, but



Acer opted to go big with their Bluetooth keyboard.



a few seconds each go-round, especially if you don't yet know what you're doing. It would be much more efficient to snap the tablet into a keyboard dock with a proper hinge mechanism, and simply shut it when you're ready to move.

DISPLAY AND SOUND

Even for a budget tablet, the W3's 8.1-inch, 1,280 x 800 screen feels like a letdown. Head-on, at least, colors are balanced and the pixel density is pleasing, but once you adjust the screen angle at all, whether it be horizontally or vertically, the panel quickly becomes washed out. Pick a *really* off-kilter angle and the screen takes on a sickly yellow overcast, especially in areas that are supposed to be white. That's bad news for people who don't immediately buy the optional keyboard dock; you're going to spend a lot of time with the tablet resting face-up on a table or your lap. And it's a shame, because we're pretty sure the industry is better than this: if ASUS and Amazon can make budget Android tablets with knockout screens, surely the same can be done for Windows... right?

As for the sound quality, it's some of the tinniest, weakest we've heard from



The display works well when viewed head-on, but not at angles.

a tablet yet. Were you expecting much more from an extra-small, extra-affordable device?

PERFORMANCE AND BATTERY LIFE

Lately, we've mostly been testing Windows PCs with full-fledged Core processors inside — you know, Core i5, occasionally Core i7. And as more and more OEMs have upgraded their wares to Haswell, we've noted a sizable performance jump, particularly with regards to battery life. In the case of low-pow-



BENCHMARK	PCMARK7	3DMARK06	ATTO (TOP DISK SPEEDS)
ACER ICONIA W3 (1.8GHZ INTEL ATOM Z2760, INTEL HD)	1,447	N/A	84 MB/S (READS); 35 MB/S (WRITES)
HP ELITEPAD 900 (1.8GHZ INTEL ATOM Z2760, INTEL HD)	1,297	454	82 MB/S (READS); 28 MB/S (WRITES)
LENOVO IDEATAB LYNX (1.8GHZ INTEL ATOM Z2760, INTEL HD)	1,444	457	81 MB/S (READS); 35 MB/S (WRITES)
DELL LATITUDE 10 (1.8GHZ INTEL ATOM Z2760, INTEL HD)	1,437	458	82 MB/S (READS); 35 MB/S (WRITES)
ASUS VIVOTAB SMART (1.8GHZ INTEL ATOM Z2760, INTEL HD)	1,400	372	83 MB/S (READS); 35 MB/S (WRITES)
LENOVO THINKPAD TABLET 2 (1.8GHZ INTEL ATOM Z2760, INTEL HD)	1,423	460	83 MB/S (READS); 35 MB/S (WRITES)
HP ENVY X2 (1.8GHZ INTEL ATOM Z2760, INTEL HD)	1,425	N/A	83 MB/S (READS); 34 MB/S (WRITES)
SAMSUNG ATIV SMART PC (1.8GHZ INTEL ATOM Z2760, INTEL HD)	N/A	374	82 MB/S (READS); 36 MB/S (WRITES)
ACER ICONIA W510 (1.8GHZ INTEL ATOM Z2760, INTEL HD)	1,297	N/A	81 MB/S (READS); 28 MB/S (WRITES)

ered tablets, though, we don't yet have a new Atom chipset from Intel, which means all the models we're testing continue to have identical specs: namely, a 1.8GHz Z2760 CPU, Intel HD graphics and 2GB of RAM.

Not surprisingly, then, it performs more or less like the others, particularly when it comes to read and write speeds. In the disk benchmark ATTO, the Samsung-made drive reached peak read / write speeds of 84 MB/s and 35 MB/s, respectively, which is near-identical to what we've seen on every other model, plus a megabyte or two. We also logged a 15-second startup time, which

isn't exceptional, exactly — the Lenovo ThinkPad Tablet 2 performs just the same — but it's still faster than what we've seen from a few competing offerings. HP's ElitePad 900, for example, takes a full 30 seconds to boot into the Start Screen. If anything, we wish the accelerometer were quicker to switch between landscape and portrait orientation. Not that other tablets are great at this either, but with larger 10-inch models, you're probably less likely to ever use it vertically in the first place.

Otherwise, it performs about the same as other Atom-powered tablets. Though it scores slightly higher in PC-



WINDOWS 8 SYSTEMS	BATTERY LIFE
ACER ICONIA W3	9:21
THINKPAD TABLET 2	10:27
DELL LATITUDE 10	9:03 / 16:01 (WITH THE DOCK)
ACER ICONIA W510	8:19 (TABLET ONLY) / 14:17 (WITH THE DOCK)
HP ENVY X2	7:53 (TABLET ONLY) / 12:30 (WITH THE DOCK)
ASUS VIVOTAB SMART	7:30
HP ELITEPAD 900	7:15
SAMSUNG ATIV SMART PC (AT&T)	7:04 (WIFI ONLY) / 6:43 (LTE)
LENOVO IDEATAB LYNX	6:10 / 9:24 (WITH THE DOCK)
TOSHIBA KIRABOOK	5:12
TOSHIBA SATELLITE U845	5:12

Mark 7, a possible result of the upgrade to Windows 8.1, that doesn't translate into significantly better real-world performance. As we've always said, Atom processors, as low-powered as they are, are sufficient for precisely the sorts of things you might do on a tablet (especially a little one like this). We had no problem streaming music and video, or opening and switching between apps. It will choke on graphically detailed games before you even get past the opening animation sequence, but again, you're not buying a

tablet like this because you want to play *BioShock Infinite*.

Acer rates the W3 for eight hours of battery life, but really, that's just a conservative estimate approved by the company's legal department. As it happens, the tablet managed an impressive nine hours and 21 minutes in our battery test, and that was under fairly grueling conditions too (video looping off local storage, WiFi on, brightness at 65 percent). Had we stuck to web surfing and lowered the brightness a notch, we're sure we could've squeezed out even more runtime.

SOFTWARE AND WARRANTY

Because we borrowed our review unit from Microsoft while attending the Build 2013 developer conference, it came pre-loaded with Windows 8.1 Preview. As you might already know, it'll be another month yet before Microsoft even ships 8.1 to PC makers, so for now the tablet comes with regular old Windows 8 out of the box. Of course, you can download the preview yourself anytime you're ready.

If you're interested in a full run-down on what Windows 8.1 includes, we encourage you to read our in-depth hands-on, which details all the new apps, as well as the various UI tweaks (think: enhanced windowing options, the return of the Start button, et cetera). For the purposes of this review, though, we'll say this: Windows is a delight to use in portrait mode, which



Windows is a delight to use in portrait mode.

you might have rarely done before, but will be tempted to try now that there's finally a tablet small enough to comfortably hold in a vertical position. And while you may have always been one of the few to use Windows 8 in portrait, the newest version of the software brings some tweaks that make it especially well suited to smaller, e-reader-sized screens. For example, the expanded choice of Live Tiles, including the super-small ones, means you can better make use of that narrow screen real estate when holding the tablet vertically.

Additionally, Microsoft's added a pair of keyboard shortcuts that make on-screen typing easier. In particular, you can swipe the space bar to cycle through spelling suggestions, and then tap it to select the one you want. This works like a charm, saving you the (minor) pain of having to remove your hands from the QWERTY area to tap on a spelling pop-up. Also, you can long-press a key to get at alternate characters (the question mark doubles as the exclamation point, for instance). Even better, once you know where those secondary symbol options are going to pop up on-screen, you can just swipe the button in question in that specific direction. Coming back to that exclamation point, for instance, the exclama-

tion always appears as a pop-up above the question mark, so you can swipe upward on the question mark to make an exclamation point. This, too, works as promised, so that you don't have to tap multiple times just to get to those foreign currency symbols.

Also, we love that you can now take photos from the device's lock screen. This will be a welcome feature on 10-inch Windows 8.1 tablets too, but it's especially convenient here, where the form factor is light (and maybe even discreet) enough to use as a standalone camera. Finally, in a refreshing twist, Office 2013 doesn't just come pre-installed on the W3; it's also free to activate. Just use a code that comes in the box and enjoy.

Like other products from Acer (and pretty much every other company, really), the W3 comes with a one-year warranty, including 24/7 phone support.

CONFIGURATION OPTIONS AND THE COMPETITION

As impressive as our review unit's \$430 price is, it's not even the cheapest configuration Acer has to offer. For \$380, you can get it with mostly the same specs, except with half the storage space (32 gigs versus 64). Oh, and if you happen to be shopping for this on some third-party site, like Amazon, the configuration codes are as follows: W3-810-1416 for the 64GB model, and W3-810-1600 for the 32GB one. Either way, as we mentioned, the keyboard will add





For \$80 extra, you can have the keyboard peripheral.

\$80 to the price, while an optional carrying case costs \$35.

For now, if you're looking for a smaller-screened Windows tablet, the Acer W3 is your best and only option. ASUS is rumored to be working on something similar, and we're inclined to believe the story from the *Wall Street Journal*, even though company officials have so far declined to comment. The problem is, if this report is to be believed, the tablet(s) won't arrive until later this year, which probably means holiday shopping season at this point, as ASUS has basically missed the back-to-school window. Finally, we also wouldn't be surprised if Microsoft chimed in with a smaller Surface tablet, though good luck getting Mi-

crosoft to comment on *that*.

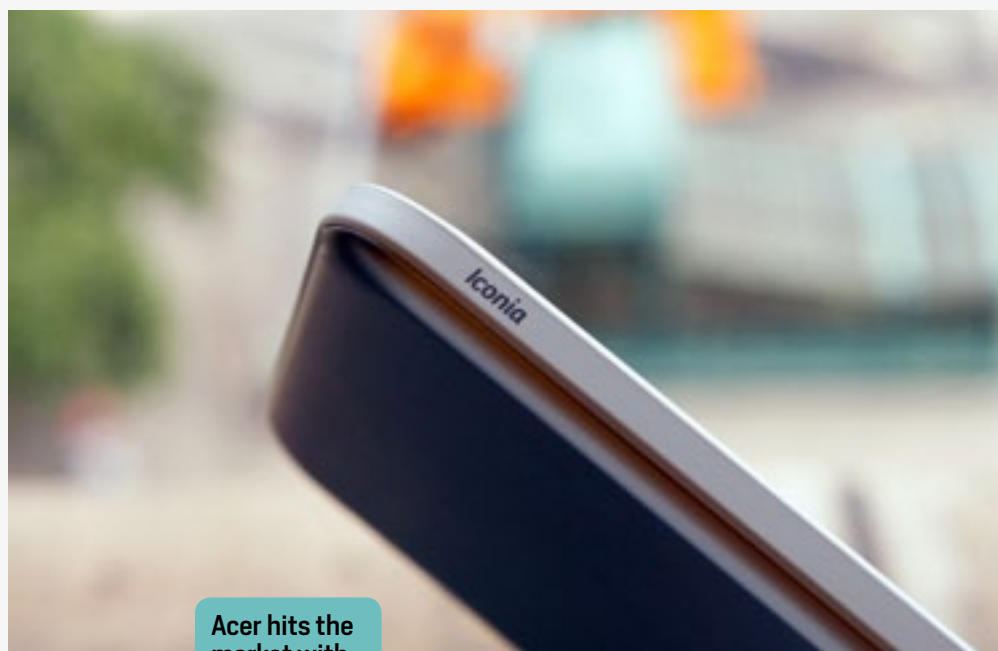
Assuming you're not dead-set on an 8-inch device, though, there are plenty of good Windows tablets, most of which offer impressive battery life even on last year's Atom CPU. Excluding any ARM-powered Windows RT devices, our favorites are the affordable ASUS VivoTab Smart and the Lenovo ThinkPad Tablet 2, which costs more, but adds pen support, optional 4G LTE and the best dang keyboard dock we've ever used. We'd recommend more powerful Core i5 models like the Surface Pro too, but most haven't been upgraded with Haswell yet, and the battery life won't be nearly as long as what you get here.



WRAP-UP

For the time being, at least, the Acer Iconia W3 isn't just the best small-screened Windows 8 tablet; it's your only option. Even if there were more to choose from, though, the W3 has a few things to recommend in its own right. No.1 is price. With a starting MSRP of \$380, Microsoft Office included, we can just about forgive most of its flaws, including its cheap build quality and that oddly designed keyboard. And to be fair, it'll be hard for *any* OEM to craft a good 8-inch keyboard. Just sayin'.

Additionally, the W3 lasts nearly nine and a half hours on a charge, and that's under grueling conditions, and without the aid of a second battery. The only thing we'd really change is the screen — if budget Android tablets like the Nexus 7 can have nice screens,



Acer hits the market with the very first sub-10-inch Win 8 tablet.

so can low-end Windows tablets. As is, though, the W3 proves that Windows 8 is a great match for smaller-screened devices. Even more than that, it's a great value; the best bang-for-your-buck Windows 8 tablet you're going to find. And yes, that includes the larger guys too. **D**

Dana Wollman is Reviews Editor at Engadget, a marathoner, lover of puns and a native Brooklynite.

BOTTOMLINE

ACER ICONIA W3

\$380+



PROS

- Reasonably priced
- Microsoft Office included
- Long battery life
- For now, the only 8-inch Windows 8 tablet

CONS

- Washed-out screen with poor viewing angles

BOTTOMLINE

In addition to its portable, easy-to-hold form factor, the W3's long battery life and reasonable price make it a great value among Windows tablets.



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REVIEW

SAMSUNG GALAXY S4 ZOOM



Has Samsung finally cracked the code on smartphone / camera hybrids with the **GS4 Zoom** or does the technology still need time to develop?
By Zach Honig

A **Android on a** point-and-shoot? Last year we learned that it could be done. But with some features that duplicate the functionality of a smartphone without the ability to make calls, Samsung's Galaxy Camera was a confusing mix of form and function. It was very much a first-generation device, and while they may have regretted it later, some curious early adopters did drop \$500 for the soon-to-be-obsolete hybrid. The cumbersome compact, with its massive 21x lens and power-hungry 4.8-inch touchscreen, may not have won over the photography commu-



nity, but Samsung's 2013 approach has a much better chance at success.

With a design that's based on the Galaxy S4 Mini, the Galaxy S4 Zoom adds a fair amount of heft to accommodate the feature that sets it apart from every other smartphone on the market: a 10x 24-240mm optically stabilized lens. But it's still pocketable, believe it or not, and it functions quite well as a phone. While the Galaxy Camera was first and foremost a camera, the Zoom's primary function is as an ordinary Android smartphone — albeit one with a larger sensor and a powerful lens. Can it replace both devices? And will you want it to?

HARDWARE

Under the hood, the Zoom (SM-C101) is far more similar to the GS4 Mini than Samsung's full-fledged flagship. There's an Exynos 4212 chipset with a dual-core 1.5GHz Cortex-A9 CPU and 1.5GB of RAM. The battery capacity has been boosted slightly, from 1,900 to 2,330mAh, given that the increased body size can accommodate a larger cell. The Galaxy Camera, for its part, includes a 1,650mAh pack, and considering the paltry longevity of that device, we certainly appreciate

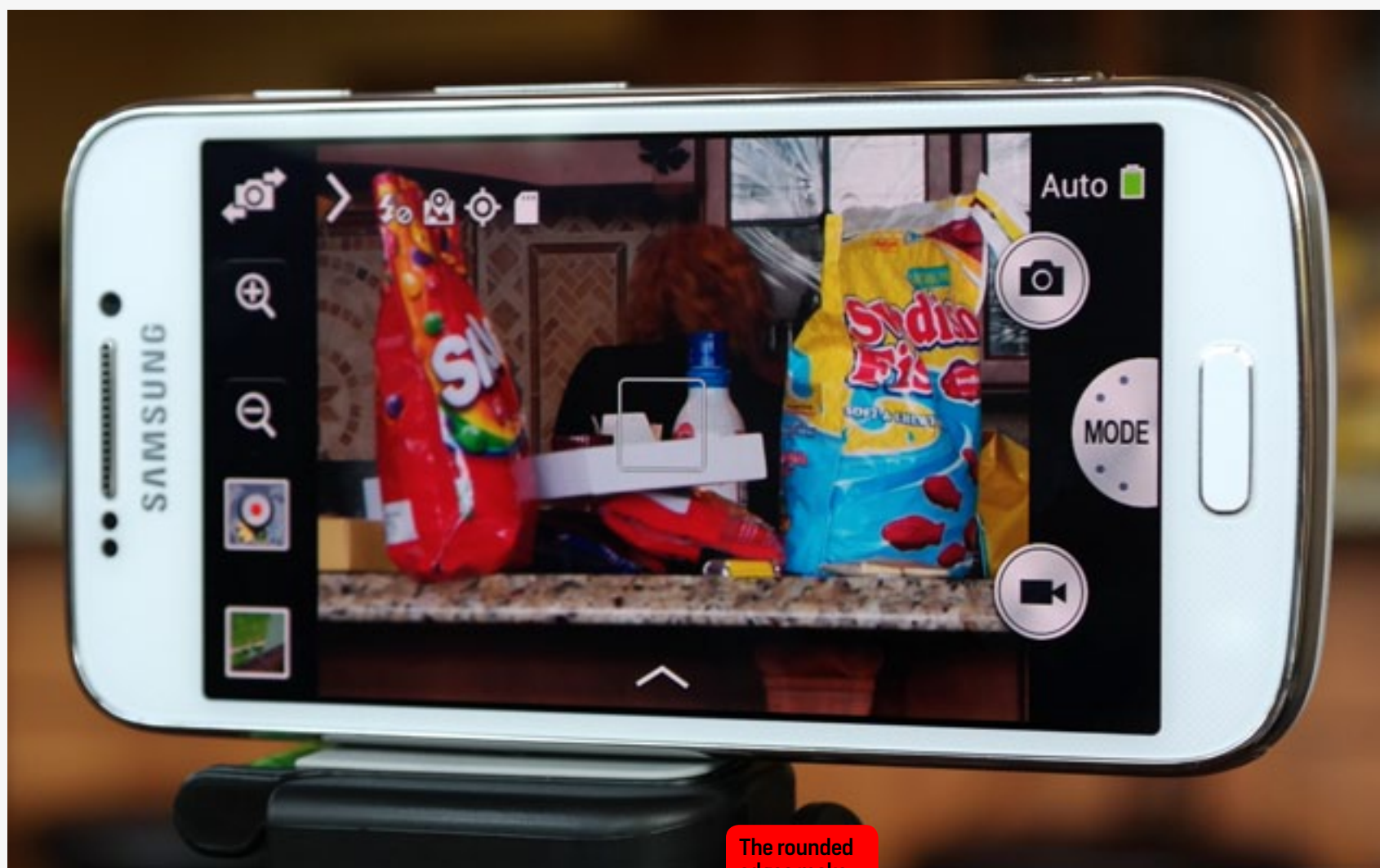
the extra juice here.

If your current smartphone has a 5-inch or larger touchscreen, the Zoom's panel is likely to be a bit of a letdown. It measures just 4.3 inches, and while the AMOLED structure does enhance contrast and saturation, the 960 x 540-pixel (qHD) resolution is not ideal. It looks all right given the relatively small 4.3-inch panel size, but we would have preferred to see a higher-res display on such a photo-centric device. With the added camera components, there's a lot of potential for damage here if the device collides with another surface, but the Corning Gorilla Glass 3 layer should help protect the screen from scratches, at the very least.

The Zoom adopts the GS4's plastic design, so right off the bat it doesn't feel like a premium device. It's significantly thicker than any current smartphone, and even most point-and-shoot cameras.

The larger body allows for a bigger battery than the GS4 Mini.





The rounded edges make a tripod quite useful for some shots.

Still, it fits in a jeans pocket, and it's comfortable to hold both as a phone and as a camera. Curiously, every side of the device is slightly curved, so it's impossible to stand the camera up on its own. You can mount it on a tripod, of course, but if you don't have one around and need to do some hands-free shooting, you're out of luck.

On the imaging front, there's a 1/2.33-inch, 16-megapixel BSI CMOS sensor — the chip is large for a phone, but on the smaller side when it comes to cameras. The f/3.1-6.3, 24-240mm, 10x optical zoom isn't particularly fantastic for low-light shooting, but if you're used to snapping images on a standard smartphone, the optics here should be more than adequate. There's

a 1.9-megapixel front-facing camera as well, for capturing self-portraits and conducting video chats. And there's a standard xenon flash on the rear.

While the Zoom resembles a fairly sizable point-and-shoot camera from behind, it looks entirely like a compact smartphone from the front. Hardware controls are incredibly limited, with the standard home key representing the only button on the front, positioned just below the bottom of the LCD. It's flanked by the standard menu and back touch controls that should be familiar to any recent Samsung smartphone owner — a backlight comes on to make them visible whenever you tap, and they fade from view after a user-select-



SPECIFICATIONS	SAMSUNG GALAXY S4 ZOOM
DIMENSIONS	125.3 X 63.3 X 15.25MM (4.93 X 2.45 X 0.6 INCHES)
WEIGHT	208G (7.34 OZ)
SCREEN SIZE	4.3 INCHES
SCREEN RESOLUTION	960 X 540 (256 PPI)
SCREEN TYPE	SUPER AMOLED
BATTERY	2,330MAH LI-POLYMER (REMOVABLE)
INTERNAL STORAGE	8GB
EXTERNAL STORAGE	MICROSDXC (UP TO 64GB)
REAR CAMERA	16MP, BSI CMOS
FRONT-FACING CAM	1.9MP
VIDEO CAPTURE	1080P / 30 FPS (FRONT)
NFC	YES
RADIOS	VARIES BY REGION AND OPERATOR
BLUETOOTH	V4.0 LE
SOC	EXYNOS 4 DUAL 4212
CPU	1.5GHZ DUAL-CORE
GPU	MALI-400
RAM	1.5GB
ENTERTAINMENT	MHL 2.0, IR TRANSCIVER, DLNA, WIFI DIRECT
WIFI	DUAL-BAND, 802.11A/B/G/N
WIRELESS CHARGING	NO
OPERATING SYSTEM	ANDROID 4.2.2 (TOUCHWIZ)

able period of inactivity.

On the right side of the device (top side in camera mode), there's a narrow power button up top, a volume rocker below and a shutter release button towards the bottom, positioned just beside the handgrip. On the bottom (right side in camera mode), there's a battery compartment with an incredibly flimsy door, and a micro-SIM slot beneath a flip-out plastic cover. Around the left side, you'll find a microSD slot and a tripod socket — the latter is filled with a removable plastic dowel, so it's flush when not in use.

On the top, there's a standard 3.5mm headphone jack and an infrared port, which pairs with the included WatchON app, enabling the device to serve as a universal remote control. Additionally, there's an earpiece, front-facing camera and various sensors above the display, and a flash and focus-assist light flanking the 10x camera lens as well. There are microphones installed on both the left side and the right in camera mode, but that second mic is positioned in such a way that it's blocked by your hand if you're holding the device by the grip. Finally, a rotating ring installed around the lens serves as a zoom trigger in shooting mode and enables other camera-related functions as well, which we'll cover a bit more later on.

SOFTWARE

With a full-fledged smartphone OS running things behind the scenes, software is clearly a focus for this camera / phone

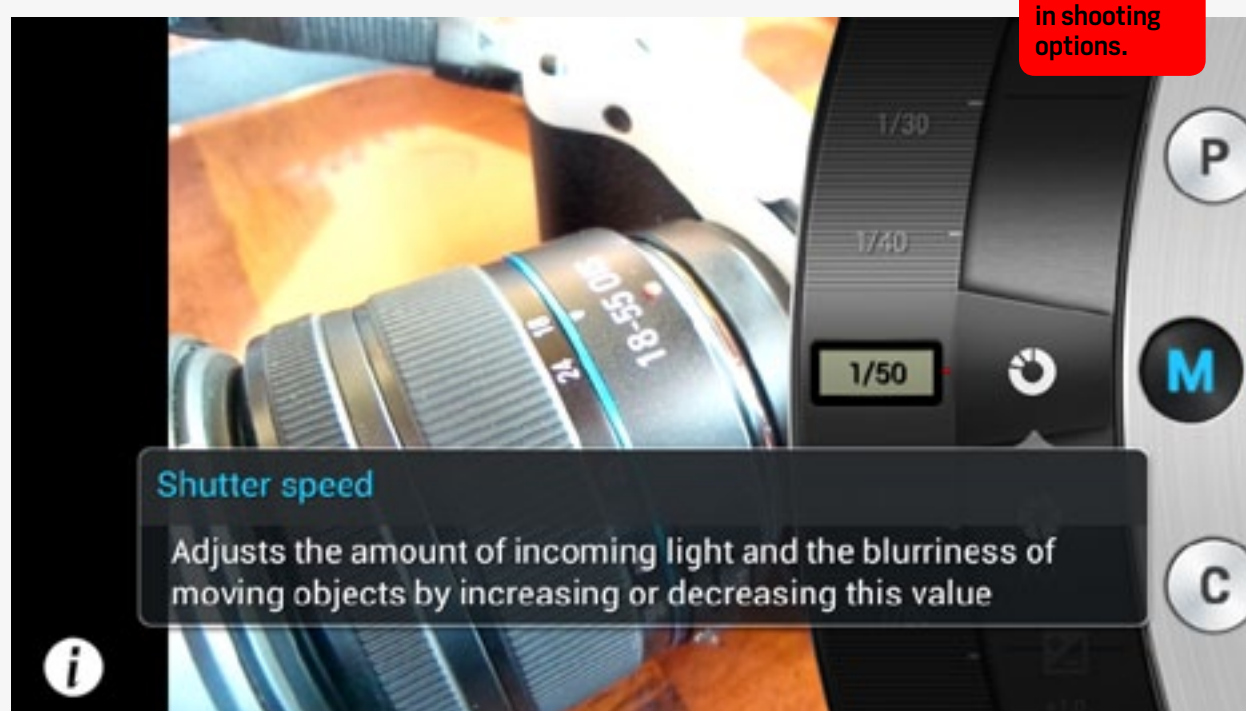


Photojournalists won't want to touch this shooter with a 10-foot pole, no matter *how* desperately they may want to own an LTE-connected cam.

hybrid. The device ships with Android version 4.2.2 (Jelly Bean), and includes the TouchWiz user interface. As you'd expect, many apps and software features that Samsung introduced with the Galaxy S 4 are present here as well. WatchON, Group Play, S Translator and Safety Assistance are all here, as is the SwiftKey-enabled swipe option for inputting text, though Smart Pause, Smart Scroll, Palm Motion, Air View, Air Gestures and an LED notification light are absent. For a

detailed look at those features, check out our Galaxy S 4 review.

Without question, the Zoom is strictly a consumer device; photojournalists won't want to touch this shooter with a 10-foot pole, no matter *how* desperately they may want to own an LTE-connected cam. The good news is that there are quite a few native options for assistive shooting, all built into the app. The default mode is Auto, with adjustments limited to flash mode



(auto, on and off) and other basics like resolution (16MP 4:3, 14MP 3:2, 12MP 16:9 and 10MP 3:2) and movie capture (1080p30, 720p60, 720p30 and VGA).

In Smart mode, you can select from Macro, Food, Indoor, Action Freeze, Rich Tone, Panorama, Waterfall, Animated Photo, Drama, Eraser, Sound & Shot, Silhouette, Sunset, Night, Fireworks, Light Trace, Smart Mode Suggest, Beauty Face, Best Photo, Continuous Shot, Best Face, Kids Shot, Landscape, Dawn and Snow presets — 26 in all. We found Smart Mode Suggest to be the most useful, given that the camera can recommend several options based on the current scene. Suggest also cut down on screen taps — without physical buttons and dials, you'll be spending far too much time navigating menus as it is, so in this case, automation is indeed welcome.

For more advanced photographers, there's an Expert option as well, which gives you access to Program, Color Wizard and Manual mode. That latter pick allows for the most control overall, as you're able to select both aperture and shutter speed, as well as ISO, white balance, metering and drive mode. Making tweaks to aperture and shutter speed between shots is moderately arduous — you'll need to either jump back into the mode menu or tap the on-screen aperture, shutter speed or ISO readout and slide to adjust.

From there, there's really no limit to how you can use the Zoom. With a full-

fledged version of Android running, you can download thousands of apps for editing and sharing images and videos. Generally, though, you'll want to do all of your capturing within the native camera app, as there's really no other match for the level of control you can access there. Take Instagram, for example. While the app loads and can be used for capturing images, there's no option to zoom or to use the hardware shutter release to snap a shot. To use those features, you need to capture your image using the native app, and then *share* it through Instagram, rather than shooting and sharing all at once. The same applies to countless other tools.

CAMERA

With the Zoom, image quality is just as important as the device's performance in other disciplines. We'll start by saying that we noticed some improvement over last year's Galaxy Camera, so if you were pleased with the shooting there, you'll probably be satisfied after capturing a handful of shots with the GS4. But with a sensor type that you'll often find in low-end point-and-shoots, and

The Zoom doesn't stand a chance against purebred opponents like the Sony RX100 or Canon S110.





The Zoom [left] and its predecessor, the Galaxy Camera.

ordinary optics, the Zoom doesn't stand a chance against purebred opponents like the Sony RX100 or Canon S110 — pricey dedicated shooters that pack tremendous imaging punch, but without the connected features offered here.

By default, the Zoom is configured to be a phone first, and then a camera. When you first power it on, you'll see the home screen, and the lens will remain retracted. Tapping the camera icon will activate the lens, however, and after a quick settings adjustment, you can jump directly into the camera app whenever you tap the power button from then on. In its default configuration, you can also activate the camera

by turning the ring around the lens to select a mode, then pressing the shutter release once to extend the lens. Alternatively, you can turn the dial to select a mode, and then tap the screen to launch the shooting mode.

Like any other Android device with a lens, the Zoom can also shoot HD video. But despite its name, you're definitely *not* going to want to zoom as you capture footage. Zooming, both when shooting stills and motion clips, is quite clunky and inaccurate — achieving a precise focal length can be difficult, and the motor is anything but smooth. If you happen to zoom while capturing video, the microphone will almost definitely pick up the motor noise, even



if you have the camera set to lower the audio levels as you move the lens. Then, once you do reach a desired focal point, the lens often hunts as it struggles to achieve focus. Additionally, if you have the focus-assist light activated, it'll fire off when you tap the screen to make a correction. Video looked acceptable otherwise, but captures certainly weren't superior to what you'd achieve with a mid-range smartphone.

IMAGE QUALITY

And how do the stills look? Not so great, unfortunately. Image quality is fairly inconsistent, even when shooting in bright daylight, with color balance and exposure shifting from shot to shot. Indoors, you'll want to stay away from higher sensitivity settings — the camera can snap at up to ISO 3200, but you'll probably want to avoid venturing beyond 800. Let's take a look at some samples.

This indoor shot was captured at f/4.9 with a 1/8-second exposure. Because of the camera's maximum aperture at this focal length, a sensitivity of ISO 3200 was required, resulting in significant noise visible even when viewing the image at 20 percent. As a result, colors also appear washed out.



ISO 3200,
100 percent view



These pups were photographed using the Zoom's automatic mode. The camera opted for an aperture of f/3.1, a shutter speed of 1/40 second and a sensitivity of ISO 125. The flash did fire, but failed to reach other areas of the frame, resulting in an underexposed image that lacks visible detail.



This outdoor image was captured at f/3.9 with a 1/50-second shutter speed and a sensitivity of ISO 100. It's slightly overexposed, resulting in a relatively modest loss of color detail.





Curiously, both of these shots above were captured with nearly identical exposures, though the weeds in the left half of the frame are clearly less vibrant than those in the right. That former section was shot at f/6.3 with a 1/25-second shutter speed at ISO 100, while the right frame was captured at f/6.3 with a 1/30-second shutter speed, also at ISO 100. The camera was set to auto mode.



Ending on a positive note, the Zoom snapped this shot at f/4.4 with a 1/80-second shutter speed and a sensitivity of ISO 100. Colors are accurate and vibrant and the camera managed to expose properly.



PERFORMANCE AND BATTERY LIFE

During regular use, the device felt incredibly sluggish. Granted, we've become accustomed to smartphones running quad-core processors, so the drop down to just two cores definitely took some getting used to. Launching menus within apps or the OS came along with a sometimes seconds-long delay, and jumping from one activity directly to the camera app to capture a shot sometimes meant uncomfortably long holds. Unfortunately, this puts the Zoom at a serious disadvantage compared to just about any dedicated point-and-shoot.

Shutter lag is also an issue with the Zoom, so if you're shooting action or really any moving subject, there's a very good chance you're going to miss the shot. With the camera preset to Auto mode and the flash turned off, the device took about three seconds to capture its first image with the lens in the retracted position. With the lens

extended and the camera app open, the delay dropped to 0.5 seconds. In continuous-shooting mode, the camera captured 20 consecutive images at a rate of about four shots per second.

Phone performance was spot-on. We were able to make and receive calls just as well as we could with most other smartphones, and audio quality was satisfactory. The microphone and earpiece volumes are definitely sufficient, so if you happen to be using this to make phone calls, you'll probably be quite satisfied. The GPS also worked as expected, identifying our location quickly when using Google Maps. Given the next issue, however, you'll probably want to bring along a backup device (or battery) for lengthy adventures.

Despite the larger cell in this year's model, battery life with the Zoom is far from stellar. With fairly light use and the device connected to WiFi (cell reception in our test location was poor),

BENCHMARK	SAMSUNG GALAXY S4 ZOOM	SAMSUNG GALAXY S4	SAMSUNG GALAXY S III
QUADRANT 2.0	4,828	12,684	5,875
VELLAMO 2.0	1,712	1,903	1,626
ANTUTU 3.X	9,844	26,143	10,944
SUNSPIDER 0.9.1 (MS)	976	772	1,194
GLBENCHMARK EGYPT 2.5 HD OFFSCREEN (FPS)	16	39	15
CF-BENCH	7,952	28,111	12,922

SUNSPIDER: LOWER SCORES ARE BETTER. SAMSUNG GALAXY S III WAS BENCHMARKED ON ANDROID 4.1.





There's a rather flimsy door covering the battery and ports.

including about 15 minutes of web browsing, 15 minutes of game play, 15 minutes of calling, 15 minutes of video playback, 15 minutes of Maps, 45 minutes of camera use and five hours of standby with push email activated, we were able to squeeze by with roughly seven hours of use. With heavy camera usage, photo sharing and mobile network access, we'd expect this figure to drop significantly, however.

Unfortunately, we wouldn't expect to make it through a full day without a backup battery on hand. Also, to make matters worse, in typical Samsung fashion, when the battery meter falls to 5 percent, the screen drops to its dimmest setting and non-critical features

cease to function. In this case, that includes the camera — yes, for the final minutes of the Zoom battery's life, you cannot even shoot a picture.

WRAP-UP

The Galaxy S4 Zoom is clearly the product of months of tweaking, collaboration and research at Samsung, but there's much work still to be done. We love that this year's model is a bona fide smartphone, in that you can use it to not only share images moments after they're captured from just about anywhere on the globe, but you can also make traditional phone calls without any hassle. We also see potential when





Entry-level users may find the Zoom to be enjoyable.

it comes to Android running on a point-and-shoot, but for now, the drawbacks of sluggish performance and poor battery life far outweigh the benefits. We're very eager to get our hands on Samsung's Galaxy NX mirrorless model, though.

So, should you take the plunge now? If your contract has expired and you're stepping up from a low-end Android handset with a small screen, you may very well fall

in love with the Zoom. But if you're considering a lateral move from one of this year's top performers, you're not going to be very happy here. Instead, consider adding a WiFi-equipped point-and-shoot, or sticking to the tried-and-true method of popping out an SD card or attaching a USB cable whenever you're ready to transfer. If you're willing to give Windows Phone a try, you may also want to hold out for the Nokia

Lumia 1020, though the jury's still out on image quality there. Instant access is phenomenally convenient, but if you care about performance and accuracy, there simply isn't an Android camera yet that we can recommend. **D**

Zach is a Senior Associate Editor and heads up Engadget's features content. He's also a lifetime lover of everything aviation and photography.

BOTTOMLINE

**SAMSUNG
GALAXY S4
ZOOM****\$TBD****PROS**

- Compact design
- Full smartphone functionality

CONS

- Poor battery life
- Mediocre image quality
- Sluggish and inconsistent performance
- Limited camera control in third-party apps

BOTTOMLINE

Samsung's GS4 Zoom may be a slight improvement over the Galaxy Camera, but it's still not very good.



INSIDE THE NIKE+ ACCELERATOR



Fueling the
quantified-self
movement
By Zachary Lutz





NIKE+ ACCELERATOR
DEMO DAY

NIKE+ ACCELERATOR
DEMO DAY

After 12 weeks of arduous development and preparation, the Accelerator companies will pitch their products to potential investors on Demo Day.

IMAGINE SETTING ASIDE THREE MONTHS of your life to pursue a dream. As romantic as the idea may seem, it requires a gut check somewhere along the way. Recently, a handful of entrepreneurs said goodbye to their families and loved ones, and in some cases, flew halfway around the globe for an opportunity to do just that. Some put their budding companies on hold, while others came only with an unwavering belief in their idea. In all, 10 companies converged on the Nike+ Accelerator in Portland, Ore., this past March, each united with the goal of building products that integrate with Nike's line of fitness trackers.



It's hard to underestimate the sacrifice, or the opportunity. With less than three weeks to relocate, many had to act quickly. But with a vote of confidence from Nike and its accelerator partner, TechStars, support from a vast network of mentors and industry contacts — and just as importantly, early access to the Nike+ API — it was a once-in-a-lifetime chance to get a head start over the competition in the burgeoning wearables industry.

From the moment these entrepreneurs touched ground at PDX, the clock was already running. In just 12 weeks, they'd pitch their products to potential investors at Demo Day — first in Portland on June 10th, and again in San Francisco on the 20th. It's a lot to accomplish in three months, and certainly unfamiliar territory for Nike as well. But even amidst the breakneck speed, one must hit the pause button and ponder Nike's motivation behind the accelerator. Ten companies were certainly given an upper hand, but can the same be said for Nike itself?

IT'S NO LONGER ENOUGH TO MOTIVATE AND INSPIRE

It doesn't take a devout Nike fan to know its business strategy extends far beyond fitness gear and apparel. After all, Nike didn't establish itself as one of the world's most admired brands through quality footwear alone. Rather, it's the company's motivational ads that resonate with audiences — a message that you can jump higher, run farther

and achieve greatness, so long as you believe in yourself. Nike employees are particularly fond of one inspirational gem: if you have a body, you are an athlete. That's the message of Nike's late co-founder, Bill Bowerman, and it's clear that the University of Oregon's former track and field coach left an indelible fingerprint on the company.

The fitness landscape is shifting, however, thanks in large part to wearable computers and software that have spawned the quantified-self movement. By combining activity-tracking sensors with a little bit of journaling, users are able to see a more complete picture of their daily exercise, sleep habits, mood and nutrition — and ultimately, set goals and chart their progress over time.

Of course, the quantified self is a familiar realm for Nike, but it's also bringing about a strategy shift in Beaverton. For insight, consider the words of Nike's VP of Digital Sport, Stefan Olander. Upon taking the stage at Demo Day in Portland, Olander was very clear about the company's ambitions, saying that it's no longer enough to motivate and inspire — that Nike must now provide the tools to help individuals accomplish their fitness goals. At a fundamental level, it seems this is what the accelerator is all about — a recognition of the possibilities and expectations surrounding the quantified self, and a tacit admission that Nike can only do so much on its own.

When Nike introduced the FuelBand in early 2012, it ushered in a new way



***“If you have a body,
you are an athlete.”***
— BILL BOWERMAN

of thinking about activity that went beyond steps taken and calories burned. The concept is known as NikeFuel, which the company is seeking to establish as the de facto currency of physical activity — something that’s quantifiable, which can also be exchanged for things of value. All products with the Nike+ branding allow users to gain and amass NikeFuel, but up until this point, the “currency” has had little meaning beyond unlocking achievements and comparing one’s performance to others. Naturally, a currency is only as good as the number of people that adopt it, and with this in mind, it seems that Nike had no choice but to open its API.

According to Olander, Nike wanted to open its platform from day one. Then again, the company’s timing could’ve also been in response to market forces. Nike’s primary competitors, Fitbit and Jawbone, have taken a more open approach with their APIs and already benefit from third-party apps such as MyFitnessPal, Endomondo, RunKeeper, Lose It!, EveryMove and MapMyFitness. Meanwhile, sources close to the situation state that Nike’s developer

portal remains closed to all but a handful; those with access include its accelerator participants, along with a few companies that signed one-off agreements such as Lose It! and Path. Naturally, the locked-down approach isn’t the quickest way to establishing partners, but it’s understandable. As the 10 accelerator companies quickly learned, the Nike+ API wasn’t quite ready for prime time.

AN UNFAIR ADVANTAGE

Step into the Nike+ Accelerator and it’s immediately clear that Nike brought its knack for inspiration to the work environment. Upon entering, you’ll find spacious meeting rooms named Fuel and Pre, wall-to-wall storage lockers and athletic bags, even more meeting rooms with artificial turf carpet, walls of whiteboards and names like Power-Song. A giant photo of Bowerman during his coaching days hangs in the main work area, adjacent to a hand-drawn mural that pays homage to the accelerator companies. Vintage magazine ads and product photos line the walls, serving as a gentle reminder that Nike was





The shared Accelerator workspace offered vintage Nike imagery and exceptionally close quarters, which fostered collaboration and problem-solving amongst the various entrepreneurs.

once a startup, too.

The Accelerator's main work area is very open, but also close quarters. From the outset, companies were encouraged — nay, forced — to communicate with one another. Beating your head on the wall about a nagging issue? There's a chance that the girl two tables over found a solution just an hour ago. It's in this environment that people tack-

Vintage magazine ads and product photos line the walls, serving as a gentle reminder that Nike was once a startup, too.

led problems, shared contacts, developed lasting relationships and consumed lots and lots of Red Bull.

One could speculate that if Nike had its way, more companies might have taken part in the program — if, for no other reason than to expose the API to a wider number of developers — but it didn't get to call those shots. The accelera-

tor itself was managed by TechStars, a renowned and highly selective venture capital investor that provides funding and mentorship through its startup programs. TechStars is considered by many to be the gold standard of the accelerator world, which operates from a formula of working with just 10 companies over an intense three-month period.

As TechStars' co-founder, David Cohen, put it, the aim is to give seed-level startups unfair advantages. By his reckoning, entrepreneurs gain two years of startup development experience in their first 30 days.

During the first month, companies were exposed to an intense process likened to mentor speed dating. It involved 20-minute one-on-one sessions over three-hour blocks, five days a week, where companies would pitch their ideas to experienced mentors from Nike's and TechStars' network, and



then receive brutally honest feedback. According to Cohen, the process is sometimes equated with mentor whiplash, but it forces companies to develop a conviction for their plan, along with the ability to defend it. Likewise, the process can also help some teams get oriented in the right direction — so that when they actually step on the gas, they'll end up where they'd intended.

As you might imagine, the experience can be exhausting. At Demo Day in Portland, TechStars' Managing Director of the Nike+ Accelerator, Dylan Boyd, reminisced that during this period of mentor speed dating, countless people seemed hungover in the morning — not because they'd been out partying, but because they were bombarded with so much information the day before.

Not everyone was completely enamored by the first month of feedback and presentations, either. Some merely wanted to dive in and start plugging away at their product. That's what the second month was all about. Teams worked more closely with individualized mentors, and received nearly unlimited access during that time. As Cohen put it, "It's one thing to hear Stefan [Olander] give a talk and disappear. It's another thing for him to sit there and work on your product with you ... and sit in five hours of meetings with you." It's "unfair advantages" like these that seem to be par for the course.

Over and over again, when asked to explain their attraction to the program, company leaders likened the combina-

tion of Nike and TechStars to the perfect storm for a fitness startup. Even beyond mentorship, there was a spirit of making things happen, and between those two names, it's safe to say they share a pretty large Rolodex. Prior to joining the accelerator, a company might have repeatedly (and unsuccessfully) tried to gain access to a particular firm, but within the program, it was simply a matter of asking. Either Nike or a TechStars affiliate would pick up the phone and make the introduction.

From the outset, it was clear that 10 startups were given an unfair advantage, but Nike's motivations were never entirely clear. Curiously, the company was skittish on this front and refused multiple opportunities for an interview, but various startup leaders provided at least a partial explanation. During the phase of heavy product development, all companies received one-on-one access with Nike's technical team for the

In essence, it seems the Nike+ Accelerator was a borderline charitable route for readying the Nike+ API for the masses...



Nike+ API. As it turns out, much of the API's functionality was developed at the accelerator, based on the needs of the individual companies.

In essence, it seems the Nike+ Accelerator was a borderline charitable route for readying the Nike+ API for the masses — a way of giving back to the companies that helped make it happen. Company leaders explained Nike made no demands upon them in the program, and merely served to remove blockers and restrictions that they faced along the way. Even integration with the Nike+ API was purely optional — though, certainly a hell of a benefit. One might consider this a radical move for a Fortune 500 firm, but then again, Nike also carried little risk; up to this juncture, only TechStars holds an investment stake in the accelerator companies.

In the buildup to Demo Day, companies shifted their focus from crafting their products to perfecting their pitches. By TechStars' count, 4,683 pitches were given over the three-month span, but it became serious business in the program's final month. Pitches were recorded in front of the camera and analyzed by a group of Nike executives. Even outsiders were brought in to help polish the delivery.

STARTUPS AND WILD IDEAS EMERGE

Even though Nike didn't impose any restrictions on the accelerator participants, it's worth stating that it selected all of the companies in conjunction with TechStars. In other words, Nike made a calculated bet on them, and it had a pretty good idea of what it was getting

into. As Olander explained at Demo Day, each of the companies represents an aspect of Fuel that Nike finds important, but is unable to address on its own. It was a considerate way of peppering the crowd of investors for the diverse array of products they were about to see... ones that focused on training, gaming, coaching, rewards, young athletes and even corporate wellness.

Upon taking the stage, Phil Black of FitDeck quickly made an impression by doing one-armed pushups before the auditorium of investors — a bold move that, fortunately for Black, elicited a round of applause. Shifting into pitch mode, Black told the story of his company, which sells a line of playing cards that allow users to experience ever-changing workouts by shuffling the deck. FitDeck also sells an iPhone app that replicates the experience, but Black's looking to develop a future version that provides custom workouts that are geared to the amount of NikeFuel that users want to earn.

Naturally, all 10 companies had a lot on the line at Demo Day, but that was particularly true of the upstarts — companies that came to the accelerator with only a vision. Marcus Estes of Chroma provided a very blunt overview of the situation. "It's the most intense pressure cooker. You have a chance — and it's not a guarantee — you have a chance at saving your company. At actually establishing it, in our case. And it's this window. And when it's over, that's it. All the advantages that you had are gone a week after Demo Day."





After the main demo, companies had time to meet one-on-one with investors, whose funding choices could make or break the future for these startups.

“It’s the most intense pressure cooker... And when it’s over, that’s it.”

— MARCUS ESTES OF CHROMA

Chroma’s co-founder, Mike Merrill, also had a lot riding on the event: accountability to his shareholders. Merrill is a publicly traded individual, who lets friends and strangers alike buy shares in him — a self-admitted “high-risk” investment — in exchange for the ability to vote on significant choices in his life. Merrill quit his job at Panic, a Portland-based software developer, and joined the accelerator based on a vote

from his shareholders (and heavy lobbying from Estes).

For Chroma’s co-founders, the best way to spend NikeFuel was clear from the beginning: fighting robots. The pair devised a turn-based strategy game called *JumpBots*, which involves customizable characters that are built and enhanced with NikeFuel. Both Estes and Merrill are gamers at heart, and they want to create a series of activity-fueled games that make fitness addictive. In their minds, Fuel is more meaningful when you spend it on something you care about.

Taking a different approach to motivation is Nextstep.io, which encourages users to become more active through a series of challenges. To explain the concept, the company’s CEO, John Schnipkoweit,



used flashy mockups, which included suggestions of mixing up one's daily routine and turning meetings into walk-and-talks. In one example, if you frequent Peet's Coffee, you might be presented with a challenge to walk to Stumptown instead — with the added encouragement that you could add two years to your life expectancy by doing so.

Laura Temel of FitCause is operating

on the notion that NikeFuel might create a better world. In her mind, a fundraising event can be just as empowering when it's done from one's wrist. Like Black of FitDeck, Temel took a risk on Demo Day by asking the crowd if they'd ever participated in a charitable run. Fortunately, *nearly 90 percent* of the audience raised their hands. Building on the momentum, Temel announced

a private beta of FitCause — open to the attendees of Demo Day — that allows users to participate in corporate-sponsored causes, along with solo missions that users fund themselves. FitCause also revealed its first corporate sponsor: Hurley, with its Waves for Water campaign — an initiative to bring clean drinking water to areas where it's most needed.

Not all companies within the Nike+ Accelerator emerged with their initial vision intact. The group from Totem came with a very conceptual idea of creating a fantasy sports league that



Chroma's *JumpBots* game offers a fun way to spend NikeFuel points [above] and CoachBase provides a digital sports coaching platform for sketching out plays, planning drills and corresponding with the team.



was powered by NikeFuel, but along the way, they perceived a problem; as they see it, the adventures of FuelBand wearers are lost in a flood of data and metrics. Not a month into the program, the team pivoted to focus on a social platform for adventure. Totem is still in heavy development, but the aim is to weave users' locations, photos, videos, tweets and NikeFuel into activities that can be easily shared with others.

Some accelerator companies are targeting businesses as their primary customers. Take HighFive, which is an ad network that offers rewards for user achievements. HighFive hopes to provide greater engagement between consumers and advertisers, but it might've also solved a problem for many of the other accelerator companies — the question of how to monetize their apps. Sprout is similar in this respect — it provides a corporate wellness platform that focuses on motivation and activity monitoring.

For many of the established startups, integration with the Nike+ API is a value-added proposition, rather than a whole new way of doing business. GoRecess is establishing itself as the OpenTable of the fitness world, allowing users to discover and reserve spots in local fitness classes. By integrating with the Nike+ API, the company's CEO, Megan Smyth, sees Fuel as a helpful way of measuring a class' intensity. Meanwhile, CoachBase develops a virtual playbook for iOS that supports a broad number of team sports. Its creators view FuelBand integration as a way for

coaches to easily view the activity of all team members — not always an easy task amongst large groups of kids.

Surprisingly enough, Nike invited the maker of another fitness tracker into the accelerator. GeoPalz currently sells an activity tracker for kids called the iBitz PowerKey, which lets users unlock game time and prizes based on their activity. By integrating with the Nike+ API, parents will have the option of wearing the FuelBand, while also keeping track of the entire family's activity within the GeoPalz app. At Demo Day, the company's CEO, Rich Schmelzer revealed new retail partners, such as Target and Best Buy, in addition to an agreement with Disney that will bring integration with its MMO-style game, *Club Penguin*.

Following the presentations, each of the CEOs took the stage to receive a standing ovation, but the true measure of success would be determined in a reception area that housed their presentation booths. Here, investors spoke with the company leaders, swapped business cards and made plans for future meetings. Needless to say, not many check-books come out on Demo Day.

KEEPING THE MOMENTUM

Goodwill and unfair advantages aside, it's not yet clear whether the program will pay off for Nike. As it stands, only the 10 accelerator companies (and a short list of others) have access to the Nike+ API, and whether they succeed is now in the hands of the investment community. According to Cohen, com-





Nike's Accelerator startup program embraces the core of its brand, tackling challenges head-on and striving for success.

panies within the TechStars accelerator typically raise an average of \$1.5 million as a result of Demo Day, and 80 percent of the companies emerge with some form of meaningful funding or revenue. Still, it's up to investors to pick the winners and losers, and that's where uncertainty comes into play.

Understandably, investors are a tight-lipped bunch, but insightful, too. In the eyes of one, Nike is raising the profile of the quantified-self movement, while also exposing investors to its multitude of possibilities. Combine this with the perception that wearable

computing may soon break into the mainstream, and some are envisioning a perfect storm in the making. With that in mind, regardless of which companies succeed and fail, it could be that Nike's move into the startup realm is giving momentum to the ecosystem as a whole. If that's Nike's true motivation, its greatest challenge might be to keep its foot down on the accelerator by opening the API to the masses. **D**

Zachary is too much of a Stones fan to be a good hippie. He's just trying to learn and do good where he can.



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VISUALIZED

**3D PRINTING'S
HOT NEW PROJECT**

NASA GRC
ROCKETDYNE
ADDITIVE MANUFACTURED
INJECTOR TESTING
LOX-GH2



ESC

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VISUALIZED

3D PRINTING'S HOT NEW PROJECT

NASA GRC
ROCKETDYNE
ADDITIVE MANUFACTURED
INJECTOR TESTING
LOX-GH2

While 3D-printed plastic knickknacks are fun, they're implausible for most true industrial applications. That's where developments in metal-based additive manufacturing come in. NASA and Aerojet Rocketdyne have employed this method — using lasers to sinter metallic powders into solid form — and tested the results by putting a 3D-printed rocket engine injector through hot-fire testing. The goal is to perfect the manufacturing process in order to build custom, space-worthy engine parts as efficiently as possible. This injector would normally take a year to make, but using this new process, it takes only four months, and costs about 70 percent less.



DAVID COLE



The MAN MAKING 3D TV AND MOVIES FOR OCULUS RIFT on punitive email measures and iPhone dependence

What gadget do you depend on most?
My iPhone. The iPhone set the limit-case for acceptable functionality and usability. Once you've used one, anything less than an iPhone is simply not acceptable. It's a go-to tool for so much of my communication that

I have no idea how I left the office before I had one.

Which do you look back upon most fondly?

My first PalmPilot. I'd tried Newton and other pen computing products, so a simple pen-driven UI that actually accomplished something was pretty revolutionary.

Which company does the most to



push the industry?

Apple (but Red kicks ass in their own space). Apple gets the timing right every time. When everyone else is adding features, they focus on performance and stability. When other companies are busy with maintenance releases or iterative updates, Apple creates a new category of product.

What is your operating system of choice?

OS X.

What are your favorite gadget names?

TiVo, GhostPro (night vision-modified GoPro) and Red Epic.

What are your least favorite?

Most camera name + model

number combinations
(e.g., Sony HXR-NX3D1).

Which app do you depend on most?

iPhone Mail (with the Weather.com app coming in a close second).

What traits do you most deplore in a smartphone?

UI that accepts input when I'm not intending to provide input (e.g., butt-dial proclivity). Short battery life.

Which do you most admire?

Responsiveness and stability. I haven't crashed an iPhone in a good, long while.

What is your idea of the perfect device?

Wow... If I had but one wish... It would have to be a dual-optical-path Red camera for stereoscopic shooting. Stereo is *such* a kludge at the moment.

What is your earliest gadget memory?

Playing with a RadioShack 100-in-1 Electronic Kit that my parents purchased for me well earlier than the age recommended on the package. I grew up in a central Florida neighborhood that had several retired Apollo space program engineers and therefore I had world-class tutelage in my early electronics explorations.

With a nod to my true inner-



geek, I can actually remember my first calculator. It was [an] RPN job with a horrible segment display. I loved it.

What technological advancement do you most admire?

The microprocessor. I'm astounded to this day that they actually work. I'm also incredibly happy to be alive during the era when the planet wired itself together with the internet.

Which do you most despise?

Bloatware operating systems.

What fault are you most tolerant of in a gadget?

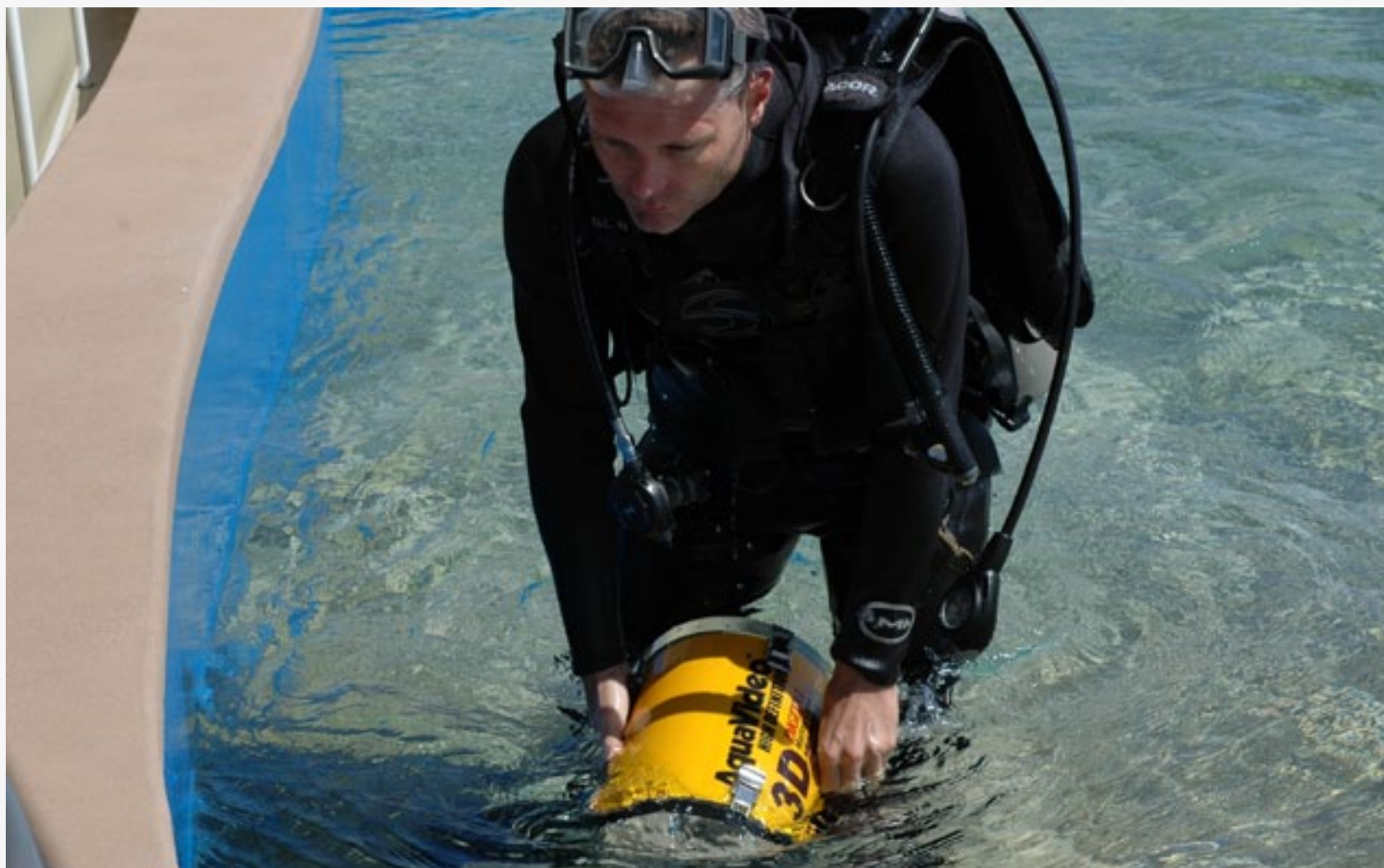
Minimal or even missing features. I can live with most beta releases, as long as there is some path to make productive use of the device. I have an electric drill with no reverse... but it's powerful as hell driving forward. I love it.

Which are you most intolerant of?

Inconsistent results. If something is going to fail, it needs to fail reliably. There is a special place in hell for, um... cameras that fail to record in the heat of battle, but work fine on the test bench.

When has your smartphone been of the most help?

My iPhone (Google Maps) Map



“There is a special place in hell for, um... cameras that fail to record in the heat of battle, but work fine on the test bench.”



app got me back to JFK after a Long Island meeting, in time for an impossibly tight flight that I *needed* to catch.

What device do you covet most?

At the moment, my Oculus Rift VR headmount. I could absolutely gush about the wide field of view and extremely low tracker latency.

I'm still blown away with every cool demo. In fact, I'm a Rift demo junky. I can't wait to try new worlds.

If you could change one thing about your phone what would it be?

Battery life. My iPhone 5 isn't quite getting me through the average day.


What does being connected mean to you?

Checking email, at least, every 15 min.

When are you least likely to reply to an email?

When I'm pissed at the sender. I tend to punish with delay. If I'm really pissed, I'll delete the first instance of the message. It's childish, but true.

When did you last disconnect?

Severely disconnect? On a boat touring the Bahamas a few months ago. Had *days* of no signal and the sat dish tracker was down. 



IN REAL LIFE is an ongoing feature where we talk about the gadgets, apps and toys we're using in real life.

UNDFIND ONE CAMERA BAG



FIFA 13 for
Xbox 360

GIVEN THAT A) I'm on the road a lot and B) my wife is the world's greatest photographer, I tend to end up testing a staggering amount of bags. For photographers with an enviable budget, there's really no match for one of Ona Bags' offerings. But for those looking for something a touch smaller (and more affordable), I think I've stumbled onto a new favorite: UNDFIND.

These bags are built by a photographer, for photographers. In fact, it's the same guy behind the formidable *SLRLounge*, a site that produces excellent how-to videos and tutorials. The latest in the bunch, the One Bag, is a real

standout. I tested the \$110 10-inch model (great for an iPad, two to three lenses and a few accessories) as well as the \$130 13-inch model (which works excellently with a MacBook Air, as it turns out). Both are made of a stretchy neoprene material, with the larger of the two being my favorite. It's capable of holding a laptop, three to five lenses and a mid-range DSLR body, but it's the details that have made the greatest impression.

For example, there's a strap on the rear for sliding atop the carry handle of a rolling airport suitcase. The zippers are double-lined in order to not scrape against any of your equipment. You'll find pockets on the cover, which are ideal for memory cards, business cards and other things you'd rather not dig for. Heck, there are even straps on the bottom to hold a monopod or tripod. It's obvious these bags were engineered by someone who *actually* shoots for a living, and the build quality is such that I'd trust it to take a beating for years on end. As a bonus? The lens divider slides right out if you'd prefer to use it for other situations on non-shooting days. Sold. — *Darren Murph*



FIFA 13 FOR XBOX 360

THE QUEST TO EARN the title of “World’s Best Football Game” has seen EA’s *FIFA* and Konami’s *Winning Eleven* (aka *Pro Evolution Soccer*) battle it out since the early days of consoles. But on this side of the pond, at least, the *FIFA* franchise seems to be the one winning over the hearts of those who enjoy the sport — and that includes me.

Don’t get me wrong, I’ve always been a fan of the work coming out of the Konami studios — especially *ISS 64* — but there’s just something about *FIFA* that keeps me shelling out \$60-plus every time the title’s yearly refresh hits shelves. Such was the case with *FIFA 13*, and although the game is now on its last legs

due to most leagues being on summer break, it’s still entertaining enough for me to play it whenever I have time for a gaming session.

While the online matches on Xbox Live are quite enjoyable, Career Mode is my favorite — how could you *not* have fun creating your own player and taking him on a journey to become a global superstar? EA also does a pretty great job of constantly updating the squads within the game, keeping them as close as possible to those in the real world. Naturally, this can be done manually, but it’s definitely nice not to have to make every single change yourself.

Things like having the proper licenses for team or player names, numerous multiplayer modes and Ultimate Team are also part of what made *FIFA 13* a must-own for me — heck, I know folks who don’t even follow the sport, but who still love the game as much as I do. *FIFA 14* on the Xbox One or PS4, you say? Count me in.

— Edgar Alvarez



UNDFIND
One
Camera
Bag



The week that was in 140 characters or less

Orbital Leak, The Velvet Hammer's Legacy and Telegrams Stop

DISTRO
07.19.13

ESC

REHASHED

@doingitwrong

We can't
stop here.
This is PRISM
country.

@lyle_west

A leak in a spacesuit caused cancellation of a spacewalk @ the International Space Station. "Didn't I ask if you had to go before we left?"

@fruhlinger

Things launched under @Tim_Stevens @engadget: Distro, Expand, Live from CES floor, Engadget Show 2.0, and even Modem World. Jus sayin.

@IJsTech

It's amazing how Tesla is looking at 5-minute super chargers for the Model [S] car battery and it takes 3+ hours to charge a phone.

@James_Phelps

I saw they have
closed the telegram
service in India.
Stop Has anyone
ever sent/received
one? Stop have a
good day. Stop

THE STRIP

BY SEAN PRYOR

THE REC ROOM



DISTRO
07.19.13

ESC

TIME MACHINES

WHAT IS THIS?
TOUCH TO FIND OUT



BROOKHAVEN NATIONAL
LABORATORY (HEAD-
SHRINKER); SIEMENS
(PET/CT)



DIST 0
07.19.78

ESC

TIME MACHINES

HEAD- SHRINKER

MODERN EQUIVALENT:

Siemens PET/CT
Scanner



This unruly looking device, casually known as the “head-shrinker,” was a pioneering invention in the Positron Emission Tomography (PET) field. James Robertson and teams in the medical and instrumentation departments at the Brookhaven National Laboratory (BNL) began work on the project in the '60s to help identify small brain tumors. Using a circular array of detectors placed around the head, they traced the decay of radioactive material, which had been introduced into the bloodstream and preferentially absorbed by tumors. It wasn't until the 1970s that the data was properly reconstructed into a working image of the brain, a breakthrough that eventually led to the adoption of PET in the medical industry and the development of other more practical brain-imaging devices.



LABORATORY (HEAD-
SHRINKER); SIEMENS
(PET/CT)





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